

ULTRASOUND TRANSDUCERS FOR IMAGING AND THERAPY

Abstract of the Disclosure

5 Ultrasound applicators able to both image a treatment site and administer
ultrasound therapy include an array of transducer elements that can be focused. In
several embodiments, an electronically phased array is used for controlling the
focal point of an ultrasound beam. The ultrasound beam produced thereby can
also be electronically steered. To reduce the quality factor or Q of the array when
the array is used for imaging, an electronic switch is selectively closed, placing a
resistance in parallel with each of the array elements. A flexible array is
10 employed in several embodiments and is selectively bent or flexed to vary its
radius of curvature and thus control the focal point and/or a direction of focus of
the array. In another embodiment, each of the transducer elements comprising the
array are individually mechanically pivotable to steer the ultrasonic beam
produced by the transducer elements.